

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project

Date

Author

TITLE

INSECT CONTROL SURVEY ON THE POWELL
NATIONAL FOREST - FALL 1942

By
Lowell J. Farmer, Ranger
and
Wanless alvey, Foreman

November, 1942

208 Forestry Building, C.S.C.
Fort Collins, Colorado
November 11, 1942

To: Dr. F. C. Craighead, In Charge, Forest Insect Investigations
From: M. D. Wygant, Entomologist, Fort Collins, Colorado
Subject: Insect Control Survey, Powell N.F.

Enclosed is a copy of "Insect Control Survey on the Powell National Forest - Fall, 1942" by Mr. L. J. Farmer, transmitted through the Regional Office in Ogden, and a copy of my letter to Mr. Robb, commenting upon the report.

Most of my comments upon the situation on the Powell are contained in the letter to Mr. Robb; therefore, I shall not repeat here. I agree with Mr. Farmer in his statement that "although the greater part of the areas treated on the Upper East Fork are now thought to be in an endemic stage of infestation, the beetles are still working aggressively in those areas recommended for control treatment and it is urgently necessary that the work be done to avoid further outbreaks."

Mr. Robb states that there is no possibility of obtaining WPA funds for the control work as suggested by Mr. Farmer. It is recommended that \$12,000 be allotted to carry out the control work as recommended.

cc 1 Craighead
1 Robb.

208 Forestry Bldg., C.S.C.
Fort Collins, Colorado
November 10, 1942

Mr. W. L. Robb, Asst. Regional Forester
Forest Service Building
Ogden, Utah

Dear Mr. Robb:

The insect survey report on the Powell by Mr. Farmer and Mr. Miles' letter accompanying the report have been received.

My comments on the results and the recommendations are as follows:

Park Unit.---This unit of 9,330 acres and showing a total of 1296 new attacks should be spotted 100 percent as recommended in the report. According to the records in the annual insect control reports for Region IV, this unit was spotted and treated 100 percent in the insect control year of 1938-39 (1,784 trees on 8,020 acres). The following insect control year, 1939-40, 420 trees were treated on 1500 acres in this unit. The 1942 survey estimate for this unit shows that the infestation has built up to 1296 trees or about 2/3 the intensity at the time of control work four years ago.

Unless the infested Douglas fir can be spotted along with the infested pine at little additional cost, no control work is recommended against the Douglas fir beetle in this unit. As you know, the infested Douglas fir is difficult to detect and I am afraid that too much time would be wasted by the spotters in examining the Douglas fir to warrant control of the few trees (estimate of 50 trees): The emergence of the adults of the Douglas fir beetle starts about the first of May; therefore, if control were carried out against both insects, the work would have to be completed by May 1. The information that the control work against the Douglas fir beetle 5 years ago has been very effective in this unit is valuable. It is surprising that the Douglas fir beetle has not come back into the area from the heavy infestation on the west side of the East Fork drainage.

The only information that I have in regard to the insect situation in the pine in Bryce Canyon N.P., adjacent to Park Unit is a copy of the survey report by Mr. Carlson from the Santa Fe office. He estimates that there are 320 infested trees on the Northern Plateau on which there are 8,000 acres of ponderosa pine type. If this estimate is correct the infestation is not severe enough to warrant treatment. However, if the infested trees are as numerous on the National Park land as on the adjacent Forest Service land, the infestation should be cleaned up on the Park Service land at the same time. The Park Service has been cutting a few trees each year with

2-Mr. Robb-November 10, 1942

the CCC, and the area that I could see conveniently from the road this fall appeared to be in satisfactory condition. I shall write to Mr. Carlson telling him of your plans to clean up the Park unit on the Powell and asking for comment on the insect situation on the Park Service lands adjacent to this unit.

Horse Creek Unit.--Control certainly is necessary on this unit. The estimate of 584 new attacks on this unit as compared to an estimate of 160 last year represents quite an increase. This unit should be spotted 100 percent.

Blue Fly, Proctor, Pine Lake, and Sweetwater Units.--The infestation on these units is not severe enough to warrant 100 percent coverage, but it is recommended that any fading groups that can be detected next spring be treated. The estimated total number of new attacks in these units is small.

General.--One important feature that Mr. Farmer failed to discuss in the survey report is that there has been quite an increase in the number of new attacks. The boundaries of some of the units were changed in the 1941 surveys which makes it difficult to follow the changes in the insect status from year to year in each unit. However, the total area surveyed each year is similar and a fair comparison can be made on this basis. The estimate for the total surveyed area of 71,828 acres in 1941 was 2190 trees, of which 1329 trees were treated, leaving a total of 800 to 900 trees ^{untreated} interested. The estimate for the 77,952 acres surveyed this fall is 3,387 trees. This represents an increase of about 3 times.

As I have mentioned before, the Black Hills beetle probably will be difficult to keep under control on the East Fork of the Sevier until much of the now mature and overmature ponderosa pine is harvested.

Recommendations.--It is recommended that \$12,000 be requested to treat the number of trees on the units outlined by Mr. Farmer. I was hoping that the infestation would show a decrease on the Powell similar to that on the Wasatch. After seeing the heavy brood in the trees this summer and learning of the very dry conditions that prevailed in southern Utah this summer and fall I am not surprised that there has been an increase in insect activity.

Very sincerely yours,

N. D. WYGANT, Entomologist

cc: 2 Craighead

CONTROL - Powell
Insect

Panguitch, Utah
October 21, 1942

INSECT CONTROL SURVEY ON THE POWELL
NATIONAL FOREST - Fall, 1942

The following table shows a statistical summary of the trend of the Black Hills beetle (Dendroctonus ponderosae Hopk.) infestation and control on the East Fork of the Sevier River drainage on the Powell National Forest since 1937 when extensive surveys were first undertaken:

Bug Year	Survey		Control	
	Area	Infested Trees	Area	Infested Trees
1938	37,900	3,270	44,753	4305
1939	74,683	4,755	33,415	6,148
1940	105,600	12,663	60,290	18,084
1941	74,540	5,835	29,540	5,085
1942	71,828	2,190	21,090	1,529
1943	77,952	3,367	-	-

Beginning in 1939 when it became necessary to instigate survey and control throughout the entire virgin ponderosa pine stands it appears that the epidemic was started on the road to suppression. Since then control measures have been of more or less a maintenance nature with few new areas requiring control treatment. This year it will be necessary to treat one area not treated since 1937 and do maintenance control work on some other areas in the Blue Fly and Proctor units.

Although the greater part of the areas treated on the upper East Fork are now thought to be in an endemic stage of infestation the beetles are still working aggressively in those areas recommended for control treatment and it is urgently necessary that the work be done to avoid further outbreaks. According to the survey data the job will not be a large one but it is an important one.

Following are the results of the survey conducted from September 21 to October 13 by Mr. Wanless Alvey as chief of party; Mr. Orland Porter; Mr. Vane Sandin; Mr. Stanley Talbot; and Mr. Lovell Twitchell. The writer spent one day with the crew for preliminary training and Dr. Wygant spent three days checking and training them to be sure that the work would be standard and of the best quality possible. Generally, the survey was made according to the procedure outlined by Senior Entomologist James C. Evenden in his paper, "Instructions for Conducting Extensive Bark Beetle Surveys by the Method of Sample Strips." The survey data were summarized by the writer as follows:

Unit Name	Percent Cruise	Approx. Acres Type Area	Total Ch. Strip	Strip Multiplier	N. A. on Strip	Total N. A.	N. A. per Ten Acres
Blue Fly No. 1	4.10	20,077	8225	24.41	23	561	0.28
Park No. 2	4.47	9,330	4175	22.35	58	1296	1.39
Badger No. 3	4.96	7,650	3792	20.17	12	242	0.32
Blubber No. 4	7.70	5,780	4452	12.98	6	78	0.13
Kanab No. 5	4.69	8,000	3753	21.32	8	171	0.21
Podunk No. 6	1.62	9,625	1563	61.58	1	62	0.06
Mill No. 7	2.45	9,860	2418	40.78	2	82	0.08
Proctor No. 8	3.23	640	207	30.92	1	31	0.48
Pine Lake No. 13	6.29	700	440	15.91	1	16	0.23
Sweetwater 14	4.08	3,200	1307	24.48	9	220	0.69
Horse Creek 15	5.13	2,450	1258	19.48	30	584	2.38
Green No. 19	4.52	640	289	22.15	2	44	0.69
Totals	4.08	77,952	31,879		153	3,367	

As shown on the attached map the areas recommended for immediate control measures are in control units no. 2, 13, 14, and 15 which are known as the Park, Pine Lake, Sweetwater, and Horse Creek Units, respectively. In addition to this we want to treat the Proctor Unit No. 8 and do some work on the Blue Fly Unit No. 1 next Spring because these are areas which are being logged now or will be logged in the near future. The small infestation on the Green Unit No. 19 can be treated through utilization by a local mill in the area. This infestation is a combination of the round-headed beetle, the Western pine beetle, and the Black Hills beetle and all three species can be found in the infested trees. It is not very aggressive but some of the infested trees are along the highway and should be cleaned up for the aesthetic value to be gained.

The Bureau of Entomology recommended that we get an estimate of the number of trees infested with Douglas fir beetle (Dendroctonus pseudotsugae Hopk.) on the Park Unit No. 2 and this was obtained along with the other survey data. There were surprisingly few new infestations; in fact there was little evidence of trees having been attacked for the past three or four years. This point was carefully checked by the writer in company with Mr. Alvey after the survey had been made. A transect was run along the Bryce Canyon Park line in the area where the heaviest treating was done during the Winter and Spring of 1937 and not one new attack could be found. There were 879 Douglas fir treated that year and the estimate this year was 50 new attacks in the area recommended for treating this year so the remaining Douglas fir beetle infestation can be treated along with the ponderosa pine. On the West side of the East Fork there is a different picture. The Douglas fir beetle is spread throughout the stands and is very aggressive. New attacks will run into the thousands.

Out of the 3437 newly infested trees it is recommended that 2450 be treated as follows:

	<u>Unit</u>	<u>Trees to be treated</u>
Blue Fly	1	253
Park	2	1346
Proctor	8	31
Baird Lake	13	16
Livestwater	14	220
Horse creek	15	584

1941 Estimate Controlled

{ 48,240 acres }
estimated 580 trees

280
160

240

The average cost for treating on the Powell over the past five years and under all conditions is \$4.68 per tree and using this figure it will require approximately \$11,500 to carry out the operation as recommended. This will include the cost of spotting which will be done 100 percent on the areas treated.

We can obtain sufficient man-power for the Fall and early Spring projects by hiring local ranchers who will be available at that time of the year. There are 11 men on W. P. A. in the County and the local office has been contacted to see if these men will be available. There is a chance that they will be and if so approximately half the project can be done with W. P. A. This would take care of about \$5,750 of the required amount of which we would need \$1,150 for the sponsor's share. This amount added to \$5,750 to hire local labor makes a total of \$6,900 necessary to be allotted to the project if the W. P. A. become available. Otherwise \$11,500 will be needed as a minimum. We would like to start the spotting operation by November 1 in the Horse Creek area and work in that vicinity as long as possible this winter. The Park area can be more easily reached during the early Spring months.

Survey Expenditures

Salaries

Wanless Alvey-----	\$122.56
Vane Sandin-----	94.71
Stanley Talbot-----	84.00
Orland Porter-----	90.60
Lovell Twitchell-----	88.00
Total	<u>\$479.87</u>

Truck and pickups inclu.

repair and depreciation-----\$ 45.09

Total survey costs-----\$524.96

Submitted October 21, 1942

Lowell J. Farmer
Lowell J. Farmer
D. F. R.

